

CHAPTER 5

STANDARD OPERATING PROCEDURES / PROTECTIVE MEASURES / MITIGATION MEASURES

This chapter presents NUWC Keyport's standard operating procedures, protective measures, and mitigation measures that would be in place to protect marine mammals and federally listed species during implementation of the Proposed Action. The protective measures presented have been standard operating procedures for all NUWC Keyport range activities since 2004.

5.1 STANDARD OPERATING PROCEDURES AND PROTECTIVE MEASURES

Operating policies and procedures, as described in NUWC Keyport Report 1509, *Range Operating Policies and Procedures Manual (ROP)*, are followed for all NUWC Keyport range activities. NUWC Keyport would continue to implement the ROP policies and procedures within the NAVSEA NUWC Keyport Range Complex with implementation of any of the proposed range-site alternatives, including the No-Action Alternative.

NUWC Keyport's mission is unique both in the nature of its RDT&E activities and geographic locations in which the activities occur. The activities have relatively small footprints and include range craft support. Keyport range personnel are composed of a small number of career civil servants who reside in the area and monitor the same small geographic area frequently as part of their normal duties. Keyport personnel acquire local knowledge about the habits and behaviors of indigenous marine species. Accordingly, it is more manageable for Keyport range personnel to focus on marine mammal identification. Such training is inconsistent for the large numbers of military personnel throughout the entire Navy associated with large scale fleet training over large areas. Fleet personnel are responsible with responding to a multitude of operational tasking and requirements and for whom responses relative to cetaceans must remain constant. NUWC Keyport career civil servants have the same job in the same locations from the same craft over many years and can therefore build upon the standard Navy MSAT training to further their knowledge of marine mammals for species identification. The Keyport employees can also enjoy a long term relationship with National Marine Fisheries Service Region Northwest office personnel to continually confirm sightings and become more educated in marine mammals that habituate or migrate through the same area on an annual basis.

Because of its RDT&E mission, NUWC Keyport conducts its activities under relatively controlled conditions which allow it to suspend an event when the requisite conditions are not met. One of these conditions includes the requirements that it conduct an event using the proposed systems at their operating limits. Another factor is that many events involve systems with sound propagation capabilities that cannot be reduced as is the case with some Fleet active sonar systems. Therefore, if the event will not meet its objectives unless operating at its limits, NUWC Keyport activities may suspend or delay the activity. Unlike fleet training activities which are interdependent on one another as part of the training event or within the unit's schedule, RDT&E scenarios are usually focused on a single unit or system under a controlled environment at NUWC Keyport taking advantage of the environmental conditions that NUWC Keyport provides. Accordingly, the range operating procedures identified as part of the alternatives were developed in a way that they did not impact the practicality of implementation, safety of personnel and negatively impact the military readiness activity.

The ROP is followed to protect the health and safety of the public and Navy personnel and equipment as well as to protect the marine environment. The policies and procedures address issues such as safety, development of approved run plans, range operation personnel responsibility, deficiency reporting, all facets of range activities, and the establishment of ‘exclusion zones’ to ensure that there are no marine mammals within a prescribed area prior to the commencement of each in-water exercise within the NAVSEA NUWC Keyport Range Complex. All range operators are trained by NOAA in marine mammal identification, and active acoustic activities are suspended or delayed if whales, dolphins, or porpoises (cetaceans) are observed within 1,000 yards, or pinnipeds are observed within 100 yards, from the intended track of the test unit. Table 5-1 provides a summary of selected ROP sections and other range procedures. The ROP contains additional sections; only the sections that specifically apply to this analysis are covered here.

NUWC Keyport’s geographic conditions involving surrounding land mass and sea state provide a very narrow ability to adopt mitigation measures that do not impact the military readiness activity. Two of the three range sites occur in inland waters, (Keyport range Site and DBRC site) where the RDT&E location provides for shore to shore surveillance. Land masses of the unique Northwest region limit underwater sound from propagating over large areas as it would during open ocean events. At the QUTR site, the relatively limited small area needed for RDT&E events allows for more focused visual observations over a smaller planned area. This in part provides NUWC Keyport the ability to provide more observers. In the inland waters, the sea states are reduced as major weather conditions do not develop because of the relatively sheltered areas presented by DBRC site and the Keyport range site.

The ROP sections shown in Table 5-1 apply to current NUWC Keyport activities at the Keyport Range Site, DBRC Site, and QUTR Site, and they would also apply to proposed activities within the current and proposed range site boundaries. The policies and procedures outlined in the ROP are continually being updated as new environmental and health and safety information becomes available. In addition, the ROP will be revised in the future to reflect any conservation or mitigation measures that arise from ongoing agency consultations (e.g., NMFS) and permitting process regarding this EIS/OEIS.

Table 5-1 NAVSEA NUWC Keyport Range Complex ROP Sections and General Flight Rules

<i>ROP</i>	<i>ROP Implementation</i>
ROP 10-1 (Revision E, June 2004)	Establishes policies and procedures to be followed in the event of an OTTO Fuel II spill within the NAVSEA NUWC Keyport Range Complex or aboard a NUWC Keyport craft during the loading/off-loading, retrieval/recovery, or stowage of test units containing OTTO Fuel II; and the handling of OTTO Fuel II waste material or reclaimable liquids by range or craft personnel.
ROP 10-4 <i>Safety/Environmental Requirements and Operational Restrictions for Test Units</i> (Revision E, June 2004)	Establishes safety/environmental requirements and operational restrictions for all test units (this includes but is not limited to, torpedoes, mobile ASW targets, inert mines, UUVs, and research and developmental vehicles) to be tested within the NAVSEA NUWC Keyport Range Complex or used in support of range activities.

**Table 5-1 NAVSEA NUWC Keyport Range Complex ROP Sections and General Flight Rules
(Continued)**

ROP	ROP Implementation
<p>ROP 6-4 <i>Range Operations and Marine Mammals</i> (Revision E, June 2004)</p>	<p>Ensures that NAVSEA NUWC Keyport Range Complex personnel from NUWC Keyport are in compliance with OPNAVINST 5090.1C, <i>Navy Environmental and Natural Resources Program Manual</i>; MMPA; and Endangered Species Act (ESA). In particular, the following marine mammal protection measures are implemented per ROP 6-4:</p> <ol style="list-style-type: none"> 1. Range activities shall be conducted in such a way as to ensure marine mammals are not harassed or harmed by human-caused events. 2. Marine mammal observers are on board ship during range activities. All range personnel shall be trained in marine mammal recognition. Marine mammal observer training is normally conducted by qualified organizations such as NOAA/National Marine Mammal Lab (NMML) on an as needed basis. 3. Vessels on a range use safety lookouts during all hours of range activities. Lookout duties include looking for any and all objects in the water, including marine mammals. These lookouts are not necessarily looking only for marine mammals. They have other duties while aboard. All sightings are reported to the Range Officer in charge of overseeing the activity. 4. Visual surveillance shall be accomplished just prior to all in-water exercises. This surveillance shall ensure that no marine mammals are visible within the boundaries of the area within which the test unit is expected to be operating. Surveillance shall include, as a minimum, monitoring from all participating surface craft and, where available, adjacent shore sites. 5. The Navy shall postpone activities until cetaceans (whales, dolphins, and porpoises) leave the project area. When cetaceans have been sighted in an area, all range participants increase vigilance and take reasonable and practicable actions to avoid collisions and activities that may result in close interaction of naval assets and marine mammals. Actions may include changing speed and/or direction and are dictated by environmental and other conditions (e.g., safety, weather). 6. In accordance with the MMPA and ESA, which address marine mammal protection, an "exclusion zone" shall be established and surveillance will be conducted to ensure that there are no marine mammals within this exclusion zone prior to the commencement of each in-water exercise. For cetaceans (whales, dolphins, and porpoises), the exclusion zone must be at least as large as the entire area within which the test unit may operate, and must extend at least 1,000 yards (914.4 m) from the intended track of the test unit. For pinnipeds, the exclusion zone extends out 100 yards (91 m) from the intended track of the test unit. 7. The minimum marine mammal exclusion zones defined above are sufficient to mitigate the effects of the acoustic energy transmitted by the test units, range tracking equipment, and the range target simulators currently in operation on U.S. ranges as of this writing. The exclusion zones specified in ROP 6-4 meet the requirements of Navy (2002a, 2003b) and NOAA (1993) and thereby ensure that active acoustic emissions from the acoustic sources currently in use do not constitute marine mammal harassment. 8. The NMFS recommendation that vessels not approach within 100 yards (91 m) of marine mammals shall be followed to the extent practicable considering human and vessel safety priorities. All Navy vessels and aircraft, including helicopters, are expected to comply with this directive. This includes marine mammals "hauled-out" on islands, rocks, and other areas such as buoys. 9. In the event of a collision between a Navy vessel and a marine mammal, NUWC Keyport activities will notify the Navy chain of Command, which would result in notification to NMFS. 10. Procedures for reporting marine mammal sightings on the NAVSEA NUWC Keyport Range Complex shall be promulgated, and sightings shall be entered into the Range Operating System and forwarded to NOAA/NMML Platforms of Opportunity Program.
<p>Aircraft Flight Rules (per Navy 2001a, 2002a)</p>	<p>General flight rules for terrestrial and marine wildlife include:</p> <ul style="list-style-type: none"> • Flights over land must be at least 1,000 ft (305 m) above the level of the land; • Flights over water must be at least 500 ft (152 m) above the level of the sea; and • Flights within 500 yards (457 m) of the shore (beach) must be at least 1,000 ft (305 m) above sea level. • A 656-ft (200-m) lateral no-fly area around bald eagle nests for all aircraft (Navy 2001a, 2002a).

5.2 NAVY PROPOSED MITIGATION MEASURES

To maximize the ability of Navy personnel to recognize instances when marine mammals are in the vicinity the following procedures will be implemented:

1. General Maritime Protective Measures: Personnel Training
 - a. All lookouts onboard platforms involved in range events will have reviewed NMFS approved MSAT material prior to use of MFA/HFA sonar.
 - b. Navy lookouts will undertake extensive training in order to qualify as a lookout.
 - c. Lookouts will be trained in the most effective means to ensure quick and effective communication with the command structure in order to facilitate implementation of protective measures if marine species are spotted.
2. General Maritime Protective Measures: Lookout Responsibilities
 - a. There will always be at least one person on watch whose duties include observing the water surface around the vessel or platform.
 - b. Personnel on lookout will have at least one set of binoculars available to aid in the detection of marine mammals.
 - c. After sunset and prior to sunrise, lookouts will employ night lookout techniques.
3. Operating Procedures
 - a. Craft personnel will make use of marine species detection information to limit interaction with marine species to the maximum extent possible consistent with safety of the craft.
 - b. All personnel engaged in passive acoustic sonar operation will monitor for marine mammal vocalizations and report the detection of any marine mammal to the Range Officer for dissemination and appropriate action.
 - c. During MFA/HFA operations, personnel will utilize all available sensor and optical systems (such as Night Vision Goggles) to aid in the detection of marine mammals.
 - d. Safety Zones – When cetaceans are detected by any means within 1,000 yards of the intended track of the test vehicle, the transmissions will be terminated. For all range sites the sources are either on or off; there is no capability to reduce source levels.
 - e. Prior to start-up or restart of active sonar, operators will check that the Safety Zone radius around the sound source is clear of marine mammals.
4. Coordination and Reporting
 - a. Navy will coordinate with the local NMFS Stranding Coordinator regarding any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that may occur at any time during or within 24 hours after completion of mid-frequency active sonar use associated with a test event.

5.3 MMPA-REQUIRED MITIGATION, MONITORING AND REPORTING

5.3.1 Requirements for Mitigation (50 CFR §218.173) Monitoring and Reporting (50 CFR §218.174)

Mitigation measures and monitoring and reporting were specified in NMFS Proposed Rule (2009a) to issue the LOA for the proposed activities on the Keyport Range Complex. Following Navy and public

review of the Proposed Rule, NMFS is preparing a Final Rule which will contain the mitigation measures and monitoring and reporting as required by the MMPA. Keyport will comply with these requirements to the extent practicable.

5.4 ESA PROTECTIVE MEASURES

In its Letter of Concurrence and Biological Opinion, the USFWS (2010) concluded that the Proposed Action may affect but is not likely to adversely affect bull trout, is not likely to destroy or adversely modify bull trout critical habitat, and is not likely to jeopardize the continued existence of the marbled murrelet. Protective measures applicable to the marbled murrelet from the BO are provided below.

5.4.1 Measures from USFWS BO

5.4.1.1 Conservation Measures

Through the consultation, the Navy agreed to implement the following “performance measures” to reduce the potential exposure of marbled murrelets to underwater sound.

PERFORMANCE MEASURE 1: During the period of 1 April through 15 September, the Navy, to the extent practicable, will not commence countermeasure RDT&E activities earlier than two hours after sunrise for RDT&E events conducted at the Keyport and DBRC sites.

PERFORMANCE MEASURE 2: The Navy will meet the following thresholds for sound sources at the distances described for RDT&E events conducted at the Keyport and DBRC sites.

Table 5-2 Maximum Distances to Sound Exposure Levels

Source	Frequency (kHz)	Radius (m) to			
		206 dB _{SPL} re 1 μ Pa	187 dB _{SEL} re 1 μ Pa ² s	183 dB _{SEL} re 1 μ Pa ² s	150 dB _{RMS} re 1 μ Pa
S1*	4.5	1	4	6	253
S2	15	< 1	< 1	< 2	46
S3*	10	< 1	2	< 3	24
S4	150	5	5	7	133
S5*	5	23	78	123	691
S6	20	23	76	119	2060
S7	25	16	54	84	571
S8	30	22	75	115	684

* S1, S3, and S5 are the only sources within the hearing range of marbled murrelets (<12.5 kHz as provided by USFWS).

PERFORMANCE MEASURE 3: Ninety-five percent of the countermeasures tested will have a duration less than 30 minutes for RDT&E events conducted at the Keyport and DBRC sites.

PERFORMANCE MEASURE 4: For 97 percent of the countermeasures tested, the distance to the 183 dB SEL threshold is less than 221 m. All countermeasures tested (100 percent) will attenuate to 183 dB SEL (or less) at a distance less than 345 m. Moreover, for 90 percent of the countermeasures tested, the distance is significantly less than 221 m for RDT&E events conducted at the Keyport and DBRC sites.

5.4.1.2 Reasonable and Prudent Measures

The USFWS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of marbled murrelets:

- Reasonable and Prudent Measure 1: Conduct testing activities at locations and times to minimize exposure of marbled murrelets to sound from countermeasures.
- Reasonable and Prudent Measure 2: Assure that performance measures described above are met to assure that incidental take is not exceeded.

5.4.1.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Navy must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

- (1) Where practicable (as determined by the Navy) during the summer, conduct long duration (exceeding 30 minutes) countermeasures tests in the Keyport Range instead of DBRC.
- (2) Where practicable (as determined by the Navy), conduct countermeasure testing activities during the summer rather than the winter.
- (3) The Navy shall submit an Annual Report for the Keyport Range and DBRC on April 1 of every year (covering data gathered through December 31 of the prior year). These data can be characterized broadly describing frequency level and duration with regard to location and date. These data shall be summarized at the end of the 5-year period in a report as well. These reports shall contain the exercise information for each countermeasure event: a) Date and times that event began and ended b) Location c) Total hours that sound was generated d) Frequency/ies and maximum source levels generated during event.
- (4) To the extent practicable, the Navy, in coordination with USFWS, shall develop and implement a method of summarizing countermeasure activities geographically and seasonally across the Keyport Range and DBRC sites. The Navy shall develop this method, in a coordinated Navy-USFWS joint report format, 6 months from the date of the issuance of the Record of Decision for this action.
- (5) The Navy, in coordination with the USFWS, shall develop and implement a plan to monitor compliance with the performance measures for countermeasure sound sources described as part of the action. This monitoring plan will be completed within 6 months from date of the Record of Decision for this action and subject to approval by Navy and USFWS. The plan and reporting will be in a coordinated Navy-USFWS joint report format, ensuring classification requirements are met.

- (6) The USFWS believes that no more than 30 murrelets will be incidentally taken as a result of the Proposed Action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the Proposed Action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. Exceedance of the incidental take level could occur should the performance measures described not be met or the numbers or duration of activities be exceeded. The Federal agency must immediately provide an explanation of the causes of the taking and review with the USFWS the need for possible modification of the reasonable and prudent measures.
- (7) The USFWS is to be notified within three working days upon locating a dead, injured or sick endangered or threatened species specimen. Initial notification must be made to the nearest USFWS Law Enforcement Office. Notification must include the date, time, precise location of the injured animal or carcass, and any other pertinent information. Care should be taken in handling sick or injured specimens to preserve biological materials in the best possible state for later analysis of cause of death, if that occurs. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed. Contact the USFWS Law Enforcement Office at (425) 883-8122, or the USFWS's Washington Fish and Wildlife Office at (360) 753-9440.

5.4.2 Measures from NMFS Draft BO

NUWC Keyport will comply with the reasonable and prudent measures and the required terms and conditions issued by NMFS in their BO to the extent practicable.

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